

ABSTRACT

A frequency translator uses a CORDIC phase rotator coupled to a phase accumulator to translate an input signal in frequency. The CORDIC phase rotator performs required phase angle rotations of input vectors using only shift and add operations. Thus, the frequency translator can be readily implemented in hardware. Higher precision arithmetic is used in the CORDIC phase rotator operations than the input vectors contain. To avoid truncation error at the output of the CORDIC phase rotator, stochastic rounding is employed. A dither signal is added to avoid errors due to nonlinear operation of D/A converters, where D/A conversion of the frequency translated signal is required.

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